ENERGY STAR® PortfolioManager®

Technical Reference

ENERGY STAR Score for Worship Facilities in the United States

OVERVIEW

The ENERGY STAR Score for Worship Facilities applies to churches, temples, mosques, synagogues, meetinghouses, or any other buildings that primarily function as a place of religious worship. The objective of the ENERGY STAR score is to provide a fair assessment of the energy performance of a property relative to its peers, taking into account the climate, weather, and business activities at the property. To identify the aspects of building activity that are significant drivers of energy use and then normalize for those factors, a statistical analysis of the peer building population is performed. The result of this analysis is an equation that will predict the energy use of a property, based on its experienced business activities. The energy use prediction for a building is compared to its actual energy use to yield a 1 to 100 percentile ranking of performance, relative to the national population.

- **Property Types.** The ENERGY STAR score for worship facilities applies to churches, temples, mosques, synagogues, meetinghouses, or any other buildings that primarily function as a place of religious worship. The score applies to individual buildings only and is not available for campuses.
- **Reference Data.** The analysis for worship facilities is based on data from the Department of Energy, Energy Information Administration's 2012 Commercial Building Energy Consumption Survey (CBECS).
- **Adjustments for Weather and Business Activity.** The analysis includes adjustments for:
    - Number of Seats
    - Weekly Operating Hours
    - Square Footage Used for Food Preparation
    - Weather and Climate (using Heating and Cooling Degree Days, retrieved based on Zip code)
    - Percent of the Building that is Heated and Cooled
- **Release Date.** The ENERGY STAR score for worship facilities is updated periodically as more recent data becomes available:
    - Most Recent Update: August 2018
    - Original Release: August 2009

This document presents details on the development of the 1 - 100 ENERGY STAR score for worship facilities. More information on the overall approach to develop ENERGY STAR scores is covered in our Technical Reference for the ENERGY STAR Score, available at www.energystar.gov/ENERGYSTARScore. The subsequent sections of this document offer specific details on the development of the ENERGY STAR score for worship facilities:

REFERENCE DATA & FILTERS

For the ENERGY STAR score for worship facilities, the reference data used to establish the peer building population in the United States is based on data from the Department of Energy, Energy Information Administration's (EIA) 2012 Commercial Building Energy Consumption Survey (CBECS). Detailed information on this survey, including complete data files, is available at: https://www.eia.gov/consumption/commercial/index.php.

To analyze the building energy and operating characteristics in this survey data, four types of filters are applied to define the peer group for comparison and to overcome any technical limitations in the data: Building Type Filters, Program Filters, Data Limitation Filters, and Analytical Filters. A complete description of each of these categories is provided in our Technical Reference for the ENERGY STAR Score, at www.energystar.gov/ENERGYSTARScore. ***Figure 1*** presents a summary of each filter applied in the development of the ENERGY STAR score for worship facilities, the rationale behind the filter, and the resulting number of properties in the data set after the filter is applied. After all filters are applied, the remaining data set has 243 properties.

Figure 1 – Summary of Filters for the ENERGY STAR Score for Worship Facilities

Condition for Including an Observation in the Analysis	Rationale	Number Remaining
PBAPLUS = 21	Building Type Filter – CBECS defines building types according to the variable "PBAPLUS." Religious Worship is coded as PBAPBLUS= 21.	352
Must operate at least 1 hour per week	EPA Program Filter – Baseline condition for being a full time worship facility.	351
Must have at least 1 seat	EPA Program Filter – Baseline condition for being a full time worship facility.	351
Must operate for at least 10 months per year	EPA Program Filter – Baseline condition for being a full time worship facility.	339
A single activity must characterize more than 50% of the floor space[1]	EPA Program Filter – In order to be considered part of the worship facility peer group, more than 50% of the building must be defined as religious worship.	327
Must report energy usage	EPA Program Filter – Baseline condition for being a full time worship facility.	327
Must be less than or equal to 1,000,000 square feet	Data Limitation Filter – CBECS masks surveyed properties above 1,000,000 square feet by applying regional averages.	327

[1] This filter is applied by a set of screens. If the variable ONEACT=1, then one activity occupies 75% or more of the building. If the variable ONEACT=2, then the activities in the building are defined by ACT1, ACT2, and ACT3. One of these activities must be coded as religious worship (PBA=18), with a corresponding percent (ACT1PCT, ACT2PCT, ACT3PCT) that is greater than 50.

If propane is used, the amount category (PRAMTC) must equal 1, 2, or 3	Data Limitation Filter – Cannot estimate propane use if it is "greater than 1000" or unknown.	312
If propane is used, the unit (PRUNIT) must be known	Data Limitation Filter – Cannot estimate propane use if the unit is unknown.	312
If propane is used, the maximum estimated propane amount must be 10% or less of the total source energy	Data Limitation Filter – Because propane values are estimated from a range, propane is restricted to 10% of the total source energy.	292
Must not use chilled water, wood, coal, or solar	Data Limitation Filter – CBECS does not collect quantities of chilled water, wood, coal, or solar.	288
If space within the building is used for food preparation, then square footage used for this purpose (FDPREPSFR) must be reported	Data Limitation Filter – Cannot calculate percentage of square footage used for food preparation if square footage value is not reported.	278
Must have no more than 250 seats per 1,000 square feet	Analytical Filter – Values determined to be statistical outliers.	271
Must have no more than 2.5 workers per 1,000 square feet	Analytical Filter – Values determined to be statistical outliers.	263
Must not operate 168 hours/week	Analytical Filter – Values determined to be statistical outliers.	253
Must have Source EUI less than or equal to 250 kBtu/ft^2	Analytical Filter – Values determined to be statistical outliers.	247
Must have Source EUI greater than or equal to 10 kBtu/ft^2	Analytical Filter – Values determined to be statistical outliers.	243

The reasons for applying filters on the use and quantity of propane are worthy of additional discussion. In CBECS, major fuel use is reported in exact quantities. However, if a building uses propane, the amount of propane is reported according to the variable PRAMTC, which uses ranges rather than exact quantities (e.g., less than 100 gallons, 100 to 500 gallons, etc.). Therefore, the quantity must be estimated within the range. To limit error associated with this estimation, EPA applies three filters related to propane.

1. The quantity of propane expressed by PRAMTC must be 1000 gallons or smaller.
2. The unit (e.g., gallons) for the quantity of propane used must be known.
3. The value of propane cannot account for more than 10% of the total source energy use. Because the exact quantity of propane is not reported, this cap ensures that the quantity of propane entered will not introduce undue error into the calculation of total energy consumption. In order to determine if the 10% cap is exceeded, the value at the high end of the propane category is employed (e.g., for the category of less than 100, a value of 99 is used). If the 10% cap is not exceeded, then EPA will use the value at the middle of the

range to calculate total energy use for the regression analysis (e.g., for the category of less than 100, a value of 50 is used).

Of the filters applied to the reference data, some result in constraints on calculating a score in Portfolio Manager and others do not. Building Type and Program Filters are used to limit the reference data to include only properties that are eligible to receive a score in Portfolio Manager, and are therefore related to eligibility requirements. In contrast, Data Limitation Filters account for limitations in the data availability, but do not apply in Portfolio Manager. Analytical Filters are used to eliminate outlier data points or different subsets of data, and may or may not affect eligibility. In some cases, a subset of the data will have different behavior from the rest of the properties (e.g., hotels smaller than 5,000 ft^2 do not behave the same way as larger buildings), in which case an Analytical Filter will be used to determine eligibility in Portfolio Manager. In other cases, Analytical Filters exclude a small number of outliers with extreme values that skew the analysis, but do not affect eligibility requirements. A full description of the criteria you must meet to get a score in Portfolio Manager is available at www.energystar.gov/EligibilityCriteria.

Related to the filters and eligibility criteria described above, another consideration is how Portfolio Manager treats properties that are situated on a campus. The main unit for benchmarking in Portfolio Manager is the property, which may be used to describe either a single building or a campus of buildings. The applicability of the ENERGY STAR score depends on the type of property. For worship facilities, the score is based on individual buildings, because the primary function of the worship facility is contained within a single building and because the properties included in the reference data are single buildings. In cases where multiple facilities are situated together, the ENERGY STAR score for Worship Facilities applies to buildings that function as the primary place of worship and not to other buildings that may be associated with a religious organization, such as living quarters or schools.

VARIABLES ANALYZED

To normalize for differences in business activity, we perform a statistical analysis to understand what aspects of building activity are significant with respect to energy use. The filtered reference data set described in the previous section is analyzed using a weighted ordinary least squares regression, which evaluates energy use relative to business activity (e.g., operating hours, number of workers, and climate). This linear regression yields an equation that is used to compute energy use (also called the dependent variable) based on a series of characteristics that describe the business activities (also called independent variables). This section details the variables used in the statistical analysis for worship facilities.

Dependent Variable

The dependent variable is what we try to predict with the regression equation. For the worship facility analysis, the dependent variable is energy consumption expressed in source energy use intensity (source EUI). This is equal to the total source energy use of the property divided by the gross floor area. The regressions analyze the key drivers of source EUI – those factors that explain the variation in source energy use per square foot in worship facilities.

Independent Variables

The reference survey collects numerous property operating characteristics that were identified as potentially important for worship facilities. Based on a review of the available variables in the data, in accordance with the criteria for inclusion in Portfolio Manager,[2] the following variables were analyzed:

[2] For a complete explanation of these criteria, refer to our Technical Reference for the ENERGY STAR Score, at www.energystar.gov/ENERGYSTARScore.

- SQFT– Square footage
- NFLOOR – Number of floors
- NELVTR – Number of elevators
- NESLTR – Number of escalators
- RWSEAT – Religious worship seating capacity
- COURT – Food court (yes/no)
- MONUSE – Months in use
- OPNMF – Open during week
- WKHRS – Weekly hours of operation
- NWKER – Number of employees during the main shift
- COOK – Energy used for cooking (yes/no)
- HEATP – Percent heated
- COOLP – Percent cooled
- SNACK – Snack bar or concession stand (yes/no)
- FASTFD – Fast food or small restaurant (yes/no)
- CAF – Cafeteria or large restaurant (yes/no)
- FDPREP – Commercial or large kitchen (yes/no)
- FDPREPSF – Commercial or large kitchen floor area (*not included in public CBECS database*)
- FDPREPPCT – Commercial or large kitchen percent of floor area (*not included in public CBECS database*)
- KITCHN – Small kitchen area (yes/no)
- BREAKRM – Employee lounge, breakroom, or pantry (yes/no)
- OTFDRM – Other food prep or serving areas (yes/no)
- RFGRES – Number of full-size residential-type refrigerators
- RFGCOMPN – Number of half-size or compact refrigerators
- RFGWIN – Number of walk-in refrigeration units
- RFGOPN – Number of open refrigerated cases
- RFGCLN – Number of closed refrigerated cases
- RFGVNN – Number of refrigerated vending machines
- PCTERMN – Number of computers
- LAPTPN – Number of laptops
- PRNTRN – Number of printers
- SERVERN – Number of servers
- TVVIDEON – Number of TV or video displays (other than computer monitors)
- COPIERN – Number of photocopiers
- HDD65 – Heating degree days (base 65)
- CDD65 – Cooling degree days (base 65)

We perform extensive review on all of these operational characteristics. In addition to reviewing each characteristic individually, characteristics are reviewed in combination with each other (e.g., Heating Degree Days times Percent Heated). As part of the analysis, some variables are reformatted to reflect the physical relationships of building components. For example, the number of personal computers is typically evaluated in a density format. The number of personal computers *per square foot* (not the gross number of computers) is expected to be correlated with the energy use per square foot. In addition, based on analytical results and residual plots, variables were examined using different transformations (such as the natural logarithm, abbreviated as Ln). The analysis consisted of multiple

regression formulations. These analyses are structured to find the combination of statistically significant operating characteristics that explain the greatest amount of variance in the dependent variable: source EUI.

The final regression equation includes the following variables:

- Weekly Operating Hours
- Number of Religious Worship Seats per 1,000 Square Feet
- Percent of Square Footage Used for Food Preparation
- Heating Degree Days times Percent of the Building that is Heated
- Cooling Degree Days times Percent of the Building that is Cooled

These variables are used together to compute the predicted source EUI for worship facilities. The predicted source EUI is the mean EUI for a hypothetical population of buildings that share the same values for each of these variables. That is, the mean energy use for a building that operates just like your building.

Seating Density

Religious worship seats per 1,000 square feet is a strong driver of energy use in worship facilities. However, this relationship between seating density and energy use intensity was observed primarily for worship facilities with more than 40 seats per 1,000 square feet. Therefore, a floor value of 40 was applied to this term – that is, the seating density adjustment in the regression equation for a property whose actual seating density is less than 40 will be identical to the adjustment for a property with a density of 40.

Gross Floor Area Used for Food Preparation

The regression analysis shows that facilities with higher gross floor area used for food preparation have higher source EUI values on average. This relationship was only observed up to a certain percentage of the total gross floor area. Therefore, the regression adjustment on gross floor area used for food preparation within the model is applied over that range, and capped at a maximum adjustment at the value of 10% of the total gross floor area of the building. That is, the gross floor area used for food preparation adjustment in the regression equation for a building where greater than 10% of the gross floor area is used for food preparation will be identical to the adjustment for a building that uses 10% of the gross floor area for food preparation.

Note that the variable used for this term was not included in the public 2012 CBECS data set, but was made available to EPA for the purposes of score development. The food preparation data for Worship Facilities is available on request from EPA.

Testing

Finally, we test the regression equation using actual religious worship buildings that have been entered in Portfolio Manager. This provides another set of buildings to examine in addition to the CBECS data, to see the average ENERGY STAR scores and distributions, and to assess the impacts and adjustments. This analysis provides a second level of confirmation that the final regression equation produces robust results that are unbiased with respect to the key operational characteristics such as building size, seating density, operating hours, and heating and cooling degree days.

It is important to reiterate that the final regression equation is based on the nationally representative reference data, not data previously entered into Portfolio Manager.

REGRESSION EQUATION RESULTS

The final regression is a weighted ordinary least squares regression across the filtered data set of 243 observations. The dependent variable is source EUI. Each independent variable is centered relative to the mean value, presented in ***Figure 2***. The final equation is presented in ***Figure 3***. All variables in the regression equation are significant at the 90% confidence level or better, as shown by significant levels (a p-level of less than 0.10 indicates 90% confidence).

The regression equation has a coefficient of determination (R^2) value of 0.1798, indicating that this equation explains 17.98% of the variance in source EUI. Because the final equation is structured with energy per square foot as the dependent variable, the explanatory power of square foot is not included in the R^2 value, thus this value appears artificially low. Re-computing the R^2 value in units of source energy[3] demonstrates that the equation actually explains 77.32% of the variation of source energy of worship facilities. This is an excellent result for a statistically-based energy model.

Detailed information on the ordinary least squares regression approach is available in our Technical Reference for the ENERGY STAR Score, at www.energystar.gov/ENERGYSTARScore.

Figure 2 - Descriptive Statistics for Variables in Final Regression Equation

Variable	Mean	Minimum	Maximum
Source EUI (kBtu/ft^2)	68.24	10.32	237.8
Weekly Operating Hours	26.49	1	105
Number of Religious Worship Seats per 1,000 ft^2 (*min value of 40*)	47.84	40.00	140.0
Percent of Square Footage Used for Food Preparation (*max value of 0.1*)	0.004984	0.0000	0.1000
Percent Heated x Heating Degree Days	3,243	191	7,769
Percent Cooled x Cooling Degree Days	1,471	0	5,221

[3] The R^2 value in Source Energy is calculated as: 1 – (Residual Variation of Y) / (Total Variation of Y). The residual variation is sum of (Actual Source Energy$_i$ – Predicted Source Energy$_i$)^2 across all observations. The Total variation of Y is the sum of (Actual Source Energy$_i$ – Mean Source Energy)^2 across all observations.

Figure 3 - Final Regression Results

Summary				
Dependent Variable		Source Energy Intensity (kBtu/ft²)		
Number of Observations in Analysis		243		
R^2 value		0.1798		
Adjusted R^2 value		0.1625		
F Statistic		10.39		
Significance (p-level)		<0.0001		
	Unstandardized Coefficients	**Standard Error**	**T value**	**Significance (p-level)**
Constant	68.24	2.780	24.55	<0.0001
C_Weekly Operating Hours	0.5107	0.1227	4.161	<0.0001
C_Number of Religious Worship Seats per 1,000 ft² *(min value of 40)*	0.7336	0.1572	4.666	<0.0001
C_Percent of Square Footage Used for Food Preparation *(max value of 0.1)*	291.9	165.7	1.762	0.0794
C_Percent Heated x Heating Degree Days	0.004180	0.001820	2.296	0.0226
C_Percent Cooled x Cooling Degree Days	0.01249	0.003460	3.615	0.0004

Notes:

- *The regression is a weighted ordinary least squares regression, weighted by the CBECS variable "FINALWT".*
- *The prefix C_ on each variable indicates that it is centered. The centered variable is equal to difference between the actual value and the observed mean. The observed mean values are presented in* ***Figure 2****.*
- *The adjustment for Number of Religious Worship Seats per 1,000 ft² has a minimum value based on 40 seats per 1,000 square feet.*
- *The adjustment for Percent of Square Footage Used for Food Preparation is capped at a maximum value of 10% of the floor area.*

ENERGY STAR SCORE LOOKUP TABLE

The final regression equation (presented in ***Figure 3***) yields a prediction of source EUI based on a building's operating characteristics. Some buildings in the reference data sample use more energy than predicted by the regression equation, while others use less. The *actual* source EUI of each reference data observation is divided by its *predicted* source EUI to calculate an energy efficiency ratio:

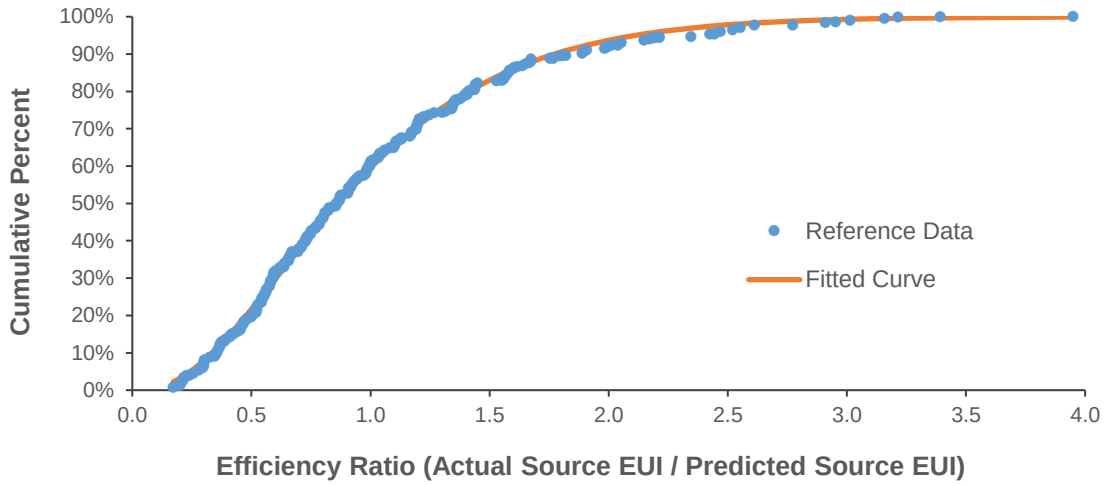
$$Energy\ Efficiency\ Ratio = \frac{Actual\ Source\ EUI}{Predicted\ Source\ EUI}$$

A lower efficiency ratio indicates that a building uses less energy than predicted, and consequently is more efficient. A higher efficiency ratio indicates the opposite.

The efficiency ratios are sorted from smallest to largest and the cumulative percent of the population at each ratio is computed using the individual observation weights from the reference data set. ***Figure 4*** presents a plot of this

cumulative distribution. A smooth curve (shown in orange) is fitted to the data using a two parameter gamma distribution. The fit is performed in order to minimize the sum of squared differences between each building's actual percent rank in the population and each building's percent rank with the gamma solution. The final fit for the gamma curve yielded a shape parameter (alpha) of 2.718 and a scale parameter (beta) of 0.3597. For this fit, the sum of the squared error is 0.02713.

Figure 4 – Distribution for Worship Facilities



The final gamma shape and scale parameters are used to calculate the efficiency ratio at each percentile (1 to 100) along the curve. For example, the ratio on the gamma curve at 1% corresponds to a score of 99; only 1% of the population has a ratio this small or smaller. The ratio on the gamma curve at the value of 25% will correspond to the ratio for a score of 75; only 25% of the population has ratios this small or smaller. The complete score lookup table is presented in ***Figure 5***.

Figure 5 – ENERGY STAR Score Lookup Table for Worship Facilities

ENERGY STAR Score	Cumulative Percent	Energy Efficiency Ratio > =	Energy Efficiency Ratio <
100	0%	0.0000	0.1234
99	1%	0.1234	0.1640
98	2%	0.1640	0.1947
97	3%	0.1947	0.2205
96	4%	0.2205	0.2434
95	5%	0.2434	0.2642
94	6%	0.2642	0.2834
93	7%	0.2834	0.3016
92	8%	0.3016	0.3188
91	9%	0.3188	0.3353
90	10%	0.3353	0.3512
89	11%	0.3512	0.3665
88	12%	0.3665	0.3814
87	13%	0.3814	0.3960
86	14%	0.3960	0.4102
85	15%	0.4102	0.4241
84	16%	0.4241	0.4378
83	17%	0.4378	0.4513
82	18%	0.4513	0.4646
81	19%	0.4646	0.4777
80	20%	0.4777	0.4907
79	21%	0.4907	0.5036
78	22%	0.5036	0.5164
77	23%	0.5164	0.5291
76	24%	0.5291	0.5417
75	25%	0.5417	0.5542
74	26%	0.5542	0.5667
73	27%	0.5667	0.5792
72	28%	0.5792	0.5916
71	29%	0.5916	0.6040
70	30%	0.6040	0.6164
69	31%	0.6164	0.6288
68	32%	0.6288	0.6412
67	33%	0.6412	0.6536
66	34%	0.6536	0.6661
65	35%	0.6661	0.6786
64	36%	0.6786	0.6911
63	37%	0.6911	0.7037
62	38%	0.7037	0.7163
61	39%	0.7163	0.7289
60	40%	0.7289	0.7417
59	41%	0.7417	0.7545
58	42%	0.7545	0.7674
57	43%	0.7674	0.7804
56	44%	0.7804	0.7935
55	45%	0.7935	0.8067
54	46%	0.8067	0.8200
53	47%	0.8200	0.8335
52	48%	0.8335	0.8470
51	49%	0.8470	0.8607

ENERGY STAR Score	Cumulative Percent	Energy Efficiency Ratio >=	Energy Efficiency Ratio <
50	50%	0.8607	0.8746
49	51%	0.8746	0.8886
48	52%	0.8886	0.9028
47	53%	0.9028	0.9172
46	54%	0.9172	0.9317
45	55%	0.9317	0.9465
44	56%	0.9465	0.9614
43	57%	0.9614	0.9766
42	58%	0.9766	0.9920
41	59%	0.9920	1.0077
40	60%	1.0077	1.0237
39	61%	1.0237	1.0399
38	62%	1.0399	1.0565
37	63%	1.0565	1.0733
36	64%	1.0733	1.0905
35	65%	1.0905	1.1081
34	66%	1.1081	1.1261
33	67%	1.1261	1.1444
32	68%	1.1444	1.1633
31	69%	1.1633	1.1825
30	70%	1.1825	1.2023
29	71%	1.2023	1.2227
28	72%	1.2227	1.2436
27	73%	1.2436	1.2652
26	74%	1.2652	1.2874
25	75%	1.2874	1.3104
24	76%	1.3104	1.3341
23	77%	1.3341	1.3588
22	78%	1.3588	1.3844
21	79%	1.3844	1.4111
20	80%	1.4111	1.4389
19	81%	1.4389	1.4680
18	82%	1.4680	1.4985
17	83%	1.4985	1.5307
16	84%	1.5307	1.5646
15	85%	1.5646	1.6006
14	86%	1.6006	1.6390
13	87%	1.6390	1.6801
12	88%	1.6801	1.7244
11	89%	1.7244	1.7725
10	90%	1.7725	1.8252
9	91%	1.8252	1.8836
8	92%	1.8836	1.9491
7	93%	1.9491	2.0239
6	94%	2.0239	2.1115
5	95%	2.1115	2.2173
4	96%	2.2173	2.3518
3	97%	2.3518	2.5383
2	98%	2.5383	2.8502
1	99%	2.8502	> 2.8502

EXAMPLE CALCULATION

As detailed in our Technical Reference for the ENERGY STAR Score, at www.energystar.gov/ENERGYSTARScore, there are five steps to compute a score. The following is a specific example for the score for worship facilities.

1 User enters building data into Portfolio Manager

- 12 months of energy use information for all energy types (annual values, entered in monthly meter entries)
- Physical building information (size, location, etc.) and use details describing building activity (hours, etc.)

Energy Data	Value
Electricity	85,000 kWh
Natural gas	2,000 therms

Property Use Details	Value
Gross floor area (ft²)	20,000
Seating capacity	300
Weekly operating hours	40
Square footage used for food preparation	1,000
Percent of the building that is heated	100
Percent of the building that is cooled	100
HDD (provided by Portfolio Manager, based on Zip code)	3,558
CDD (provided by Portfolio Manager, based on Zip code)	1,325

2 Portfolio Manager computes the actual source EUI

- Total energy consumption for each fuel is converted from billing units into site energy and source energy
- Source energy values are added across all fuel types
- Source energy is divided by gross floor area to determine actual source EUI

Computing Actual Source EUI

Fuel	Billing Units	Site kBtu Multiplier	Site kBtu	Source kBtu Multiplier	Source kBtu
Electricity	85,000 kWh	3.412	290,020	2.80	812,056
Natural gas	2,000 therms	100	200,000	1.05	210,000
				Total Source Energy (kBtu)	1,022,056
				Actual Source EUI (kBtu/ft²)	**51.1**

3 Portfolio Manager computes the predicted source EUI

- Using the property use details from Step 1, Portfolio Manager computes each building variable value in the regression equation (determining the natural log or density, or applying any minimum or maximum values used in the regression model, as necessary).
- The centering values are subtracted to compute the centered variable for each operating parameter.
- The centered variables are multiplied by the coefficients from the regression equation to obtain a predicted source EUI.

Computing Predicted Source EUI

Variable	Actual Building Value	Reference Centering Value	Building Centered Variable	Coefficient	Coefficient * Centered Variable
Constant	--	--	--	68.24	68.24
Weekly Operating Hours	40.00	26.49	13.51	0.5107	6.900
Number of Seats per 1,000 ft² *(min value of 40)*	40.00	47.84	-7.840	0.7336	-5.751
Percent of Square Footage used for Food Preparation *(max value of 0.1)*	0.05000	.004984	0.04502	291.9	13.14
Percent Heated x Heating Degree Days	3,558	3,243	315	0.004180	1.317
Percent Cooled x Cooling Degree Days	1,325	1,471	-146	0.01249	-1.824
				Predicted Source EUI (kBtu/ft²)	**82.0**

4 Portfolio Manager computes the energy efficiency ratio

- The ratio equals the actual source EUI (Step 2) divided by predicted source EUI (Step 3)
- Ratio = 51.1 / 82.0 = 0.6232

5 Portfolio Manager uses the efficiency ratio to assign a score via a lookup table

- The ratio from Step 4 is used to identify the score from the lookup table
- A ratio of 0.6232 is greater than 0.6164 and less than 0.6288
- ***The ENERGY STAR score is 69***